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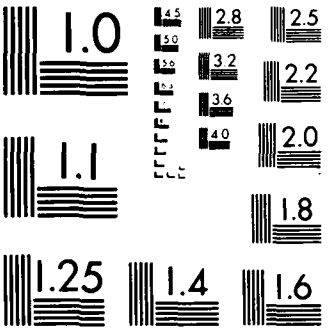

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The successful application of monoclonal antibody technology for diagnosing and treating deep fungal infections requires the solution of 3 interrelated problems: (1) characterization of fungal surface antigens associated with IgG as well as IgM responses, (2) identification of epitopes unique to individual fungi, as (3) choice of immunogens for in vivo or in vitro immuinization that stimualte antibody producing lymphocytes but not immunosuppressive responses. The most urgently needed immunodiagnostic application is development of enzyme immunoassays, latex coagglutatination , or others rapid tests for fungal antigens, provided suitable antibodies can be identified. Monoclonal antibodies have numerous other potential applications in studies of fungal taxonomy, morphology and development, immunologic relatedness, affinity purification of antigens, imaging of fungal infection sites, vaccine development and targeted drug therapy

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PRINCIPAL AUTHOR: Daniel J.P. Gennevois, M.D.

POSITION TITLE AND ADDRESS: Asst. Research Immunologist, Naval Biosciences Lab., Oakland CA

CO-AUTHOR: John W. Hoffman, Hillel B. Levine, Ph.D., and Alexander E. Karu, Ph.D.

WHO WILL PRESENT THE PAPER? NAME: Dr. Daniel J.P. Gennevois

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MONOCLONAL ANTIBODIES: BASIC AND MEDICAL APPLICATIONS FOR PATHOGENIC FUNGI.
Daniel J.P. Gennevois, John W. Hoffman, Hillel B. Levine, and Alexander E. Karu, University of California School of Public Health and Naval Biosciences Laboratory, Oakland CA 94625.

The successful application of monoclonal antibody technology for diagnosing and treating deep fungal infections requires the solution of 3 interrelated problems: (1) characterization of fungal surface antigens associated with IgG as well as IgM responses, (2) identification of epitopes unique to individual fungi, and (3) choice of immunogens for in vivo or in vitro immunization that stimulate antibody-producing lymphocytes but not immunosuppressive responses. Fungal antigens must be characterized at the macromolecule level and associated with morphologic and developmental stages. Immunoprecipitation, immunoblotting, epitope mapping, competition enzyme immunoassay, and immunoaffinity chromatography are powerful techniques which use appropriate monoclonal antibodies to identify and purify antigens. The most urgently needed immunodiagnostic application is development of enzyme immunoassays, latex coagglutination, or other rapid tests for fungal antigens, provided suitable antibodies can be identified. Monoclonal antibodies have numerous other potential applications in studies of fungal taxonomy, morphology and development, immunologic relatedness, affinity purification of antigens, imaging of fungal infection sites, vaccine development and targeted drug therapy.

We will describe several strategies we are using to obtain monoclonal antibodies to Coccidioides immitis suitable for these applications, including (a) immunoblot and immunoassay analysis of the antigens which elicit human and murine immune responses to C. immitis antigens, (b) comparison of the responses of different mouse strains immunized with different particulate and soluble antigen preparations, (c) immunization of mouse splenocytes in vitro, (d) production of hybridomas from lymph node B-cells, and (e) selection of hybridoma clones making specific antibodies that have changed subclass from IgM to IgG through natural selection or in vitro mutagenesis. The current status of similar efforts on other fungal systems will also be discussed. [These studies were supported by Contract N00014-81-C-0570 from the U.S. Office of Naval Research.]

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Print Name: Alexander E. Karu, Ph.D.
Head, Hybridoma Facility, U.C. Naval Biosciences Laboratory

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